

## **DECK INFORMATION GUIDE**

FREDERICK COUNTY DEPARTMENT OF PERMITS AND INSPECTIONS  
30 NORTH MARKET STREET FREDERICK, MD 21701 (301) 600-1086  
**(This guideline assumes all lumber to be pressure-treated Southern Pine.)**

- 1. GENERAL:**
  - Deck structures shall be designed for a minimum 40 lb. per sq. ft. live load.
  - All wood should be pressure-treated or an approved alternative.
  - Fasteners and connectors for preservative-treated wood shall be of hot dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. (See R3717.3 of the IRC)
  - Any alternate decking, guard rail, and hand rail material used **must be approved by Frederick County.**
- 2. PLANS:**
  - 2 sets of plans drawn to scale showing all proposed levels are required. Framing plans need to clearly show each level. **Computerized plans from Home Centers/Lumber Yards with separate material list will not be accepted unless the framing plans have the structural elements clearly labeled on the drawings themselves.**
- 3. FOOTINGS:**
  - Poured concrete footings should be a minimum of 8" wider than the posts (4x4 post - 12" min. width, 6x6 post - 14" min. width).
  - The bottom of footings must be a minimum of 30" below finish grade level.
  - Footings must be a min. of 8" thick below post bottom.
  - Suggest footings be placed at least 36" away from the house foundation to avoid the back-filled area.
- 4. POSTS:**
  - Post can be set directly on the footing with tamped back-fill, enclosed in concrete below grade, or on top of a pier at grade with an approved post anchor.
  - Posts should be a minimum 4x4 lumber size. Recommend using 6x6 lumber size for posts over 8'-0" tall.
  - For posts over 10'-0" tall recommend cross bracing.
- 5. BEAMS:**
  - Beams must be solidly connected to the posts and joists.
  - For maximum beam span between posts see Table 1.
  - Note: Certain framing conditions may change these allowable spans.**
- 6. JOISTS:**
  - Joists can be set in hangers on the face of the beam or cantilevered over the top of the beam. (See Table 1.)
  - For best strength the maximum cantilever distance should not exceed:

2 x 8's: 2'	2 x 10's: 3'	2 x 12's: 4'
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- 7. LEDGERS:**
  - Ledgers should be the same size lumber as the joists (min. 2 x 8) or larger and shall be properly bolted to **solid structural material** of the house (not sheathing).
  - Decks or a portion of a deck may be required to be self-supporting when attaching to an existing house cantilever. Also, if the house band board cannot be verified as structurally adequate, then the deck must be freestanding.

JOIST SPAN	6' or less	6'1"-8'	8'1" - 10'	10'1"-12'	12'1"-14'	14'1"-16'	16'1"-18'
Connection Details	On-center spacing of fasteners						
1/2 inch diameter lag screw with 15/32 inch maximum sheathing	30	23	18	15	13	11	10
1/2 inch diameter bolt with 15/32 inch maximum sheathing	36	36	34	29	24	21	19
1/2 inch diameter bolt with 15/32 inch maximum sheathing and 1/2 inch stacked washers	36	36	29	24	21	18	16

## 8. DECKING:

- When using different species of lumber or composite material follow the manufacturer's recommendations.
- Suggestion: To strengthen the deck structure, the decking may be set at a 45 degree angle across the joists.

## 9. RAILS:

- Guardrails on decks shall be a minimum of 36" in height above the deck surface and are **required** on decks over 30" above grade or level below. Railing systems shall be able to resist a concentrated load of 200 lbs. on or against the top rail at any point and direction.
- Guardrail in-fill shall be designed to withstand a horizontally applied normal load of 50 lbs. per sq. ft.
- Guardrails on stairs must be 34" minimum height above the tread nosing, if the stairs are 30" above grade.
- Balusters/pickets shall have no more than a 4" space between them on level surfaces and no more than 4 3/8" spaced along run of stairs.
- Continuous graspable handrails on stairs shall be between 34" and 38" above the tread nosing (measured vertically) and are **required** on stairs of 4 or more risers. The handgrip portion shall have a circular cross section of 1 1/4" minimum to 2" maximum.

## 10. STAIRS:

- Minimum stair width is 3' at all points above handrail and below required minimum height.
- Max. riser is 7 3/4". Max. riser opening is 4" when more than 30" above floor or walking surface.
- Min. tread is 10" measured horizontally from the leading edge to leading edge. (Nosing not required if tread is min. 11").
- The greatest riser height/tread depth within any flight of stairs shall not exceed the smallest height/depth by more than 3/8" (Tread and riser dimensions cannot exceed min./max. of above items).
- 2 x 12 stringers on stairs are required to be a maximum of 24" O.C.
- All interior and exterior stairways shall be provided with a means to illuminate the stairs, including the landings and treads.

TABLE-1				
Max Beam Spans Between Posts- #2 Southern Pine				
Joist Span	(2) 2x6	(2) 2x8	(2) 2x10	(2) 2x12
6'	9'	11'	14'	16'
8'	7'	10'	12'	14'
10'	7'	9'	10'	12'
12'	6'	8'	10'	14'
14'	6'	7'	9'	10'
16'	5'	7'	8'	10'
With 2' Cantilever				
6' + 2'	7'	9'	11'	12'
8' + 2'	6'	8'	10'	11'
10' + 2'	6'	7'	9'	10'
12' + 2'	5'	7'	8'	10'
14' + 2'	5'	6'	8'	9'
16' + 2'	5'	6'	7'	9'

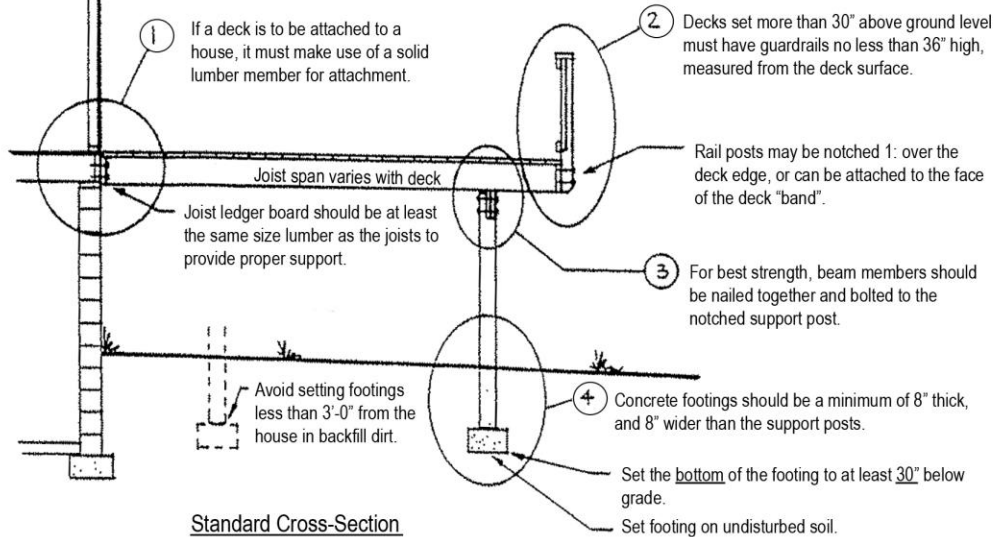
TABLE-2		
Maximum Joist Span - #2 Southern Pine		
Joist Size	Joist Spacing	Max Span
2x6	12" o.c.	10'-9"
	16" o.c.	9'-9"
	24" o.c.	8'-6"
2x8	12" o.c.	14'-2"
	16" o.c.	12'-10"
	24" o.c.	11'-0"
2x10	12" o.c.	18'-0"
	16" o.c.	16'-1"
	24" o.c.	13'-1"
2x12	12" o.c.	21'-9"
	16" o.c.	18'-10"
	24" o.c.	15'-5"

### Code References:

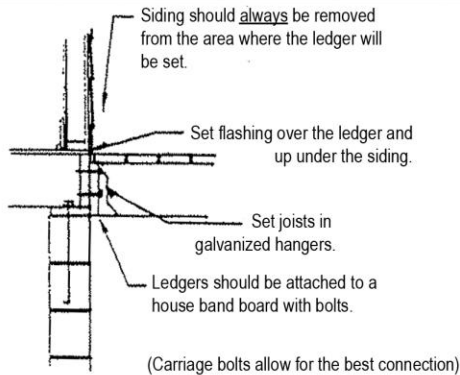
ICC International Building Code 2009

ICC International Residential Code 2009

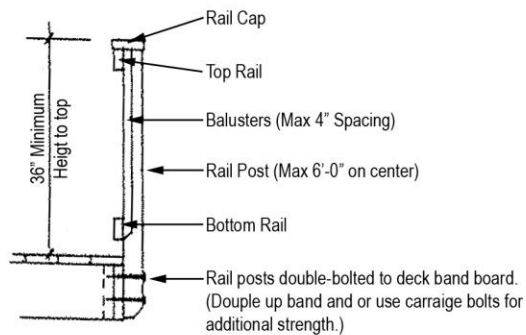
## Standard Deck Construction Information



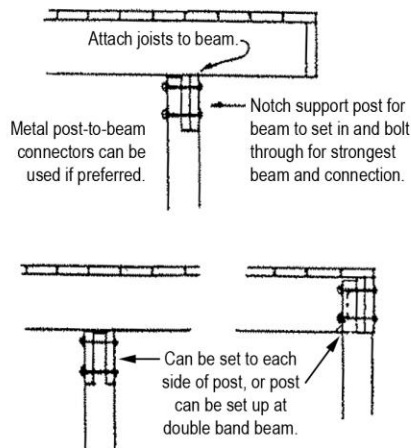
## Standard Cross-Section



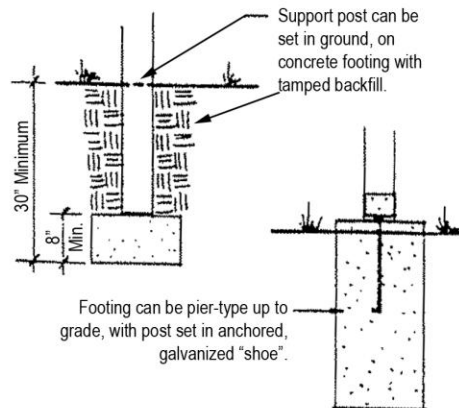
① **Ledger Detail**  
Shown for Frame/Siding Condition



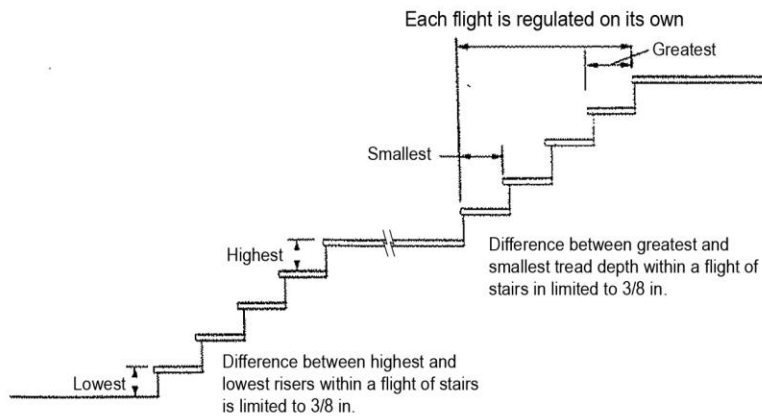
② **Railing Detail**  
Typical Detail - Many Variations Available



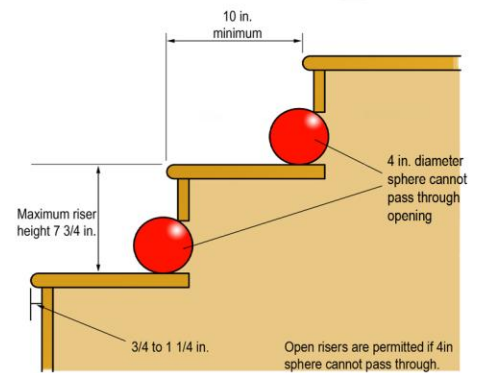
③ **Beam/Post Detail**



④ **Footing Detail**

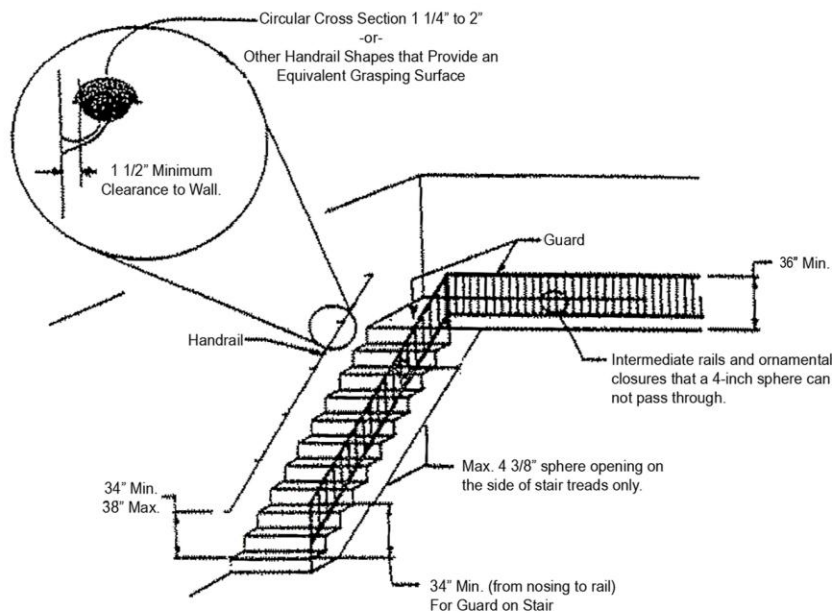


Stair Tolerances



Tread/Riser Profile  
(Open Tread)

Handrail / Guardrail



If a stairway has four or more risers, then the stairway requires a handrail on at least one side.

